

# ComCARE Alliance

*Communications for Coordinated Assistance and Response to Emergencies*

## *Using In-Vehicle Communications to Save Lives*

**Public Meeting on Safety Implications of  
Driver Distraction When Using  
In-Vehicle Technologies  
NHTSA**

July 18, 2000



ComCARE is an Alliance of more than 50 organizations representing Nurses/Doctors, Public Safety, Police/Fire, Federal/State Officials, Citizen Groups, Transportation & Industry

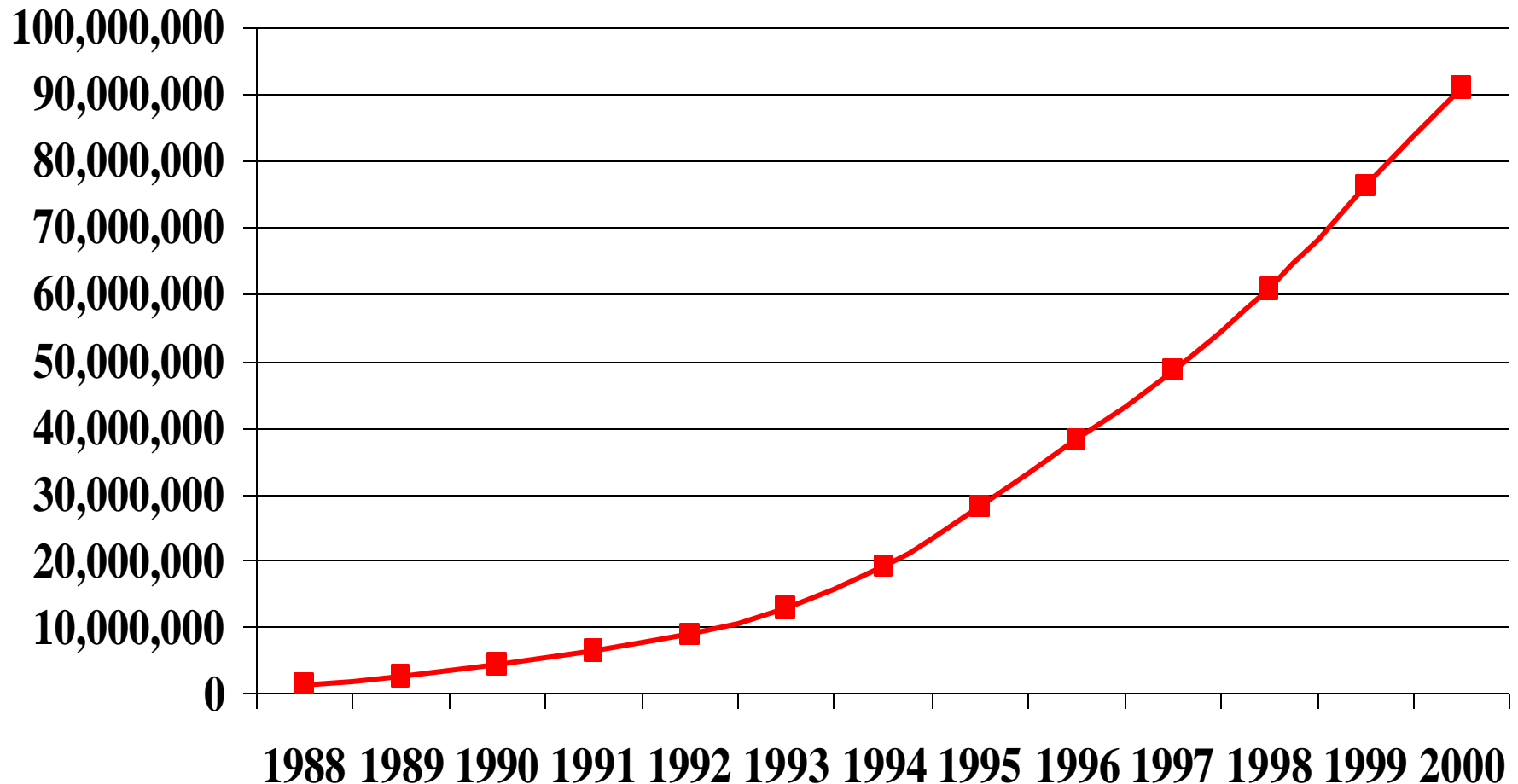


# Problem: Death & Injury on Our Roads

- 41,471 Americans Killed in Motor Vehicle Crashes in 1998\*
  - THE Leading Cause of Death for Americans, Ages 5 - 29
  - 3,192,000 Americans Injured in Motor Vehicle Crashes in 1998
- Time is Tissue: The Golden Hour
  - Mortality Rate Increases 50% Beyond the Golden Hour\*\*
- Time of Fatal Crash to Hospital Arrival, 1998\*\*\*
  - National Average for Urban Areas: 35.46 minutes
  - National Average for Rural Areas: 51.78 minutes

# Some Good News - The Explosion of Wireless Subscribers...

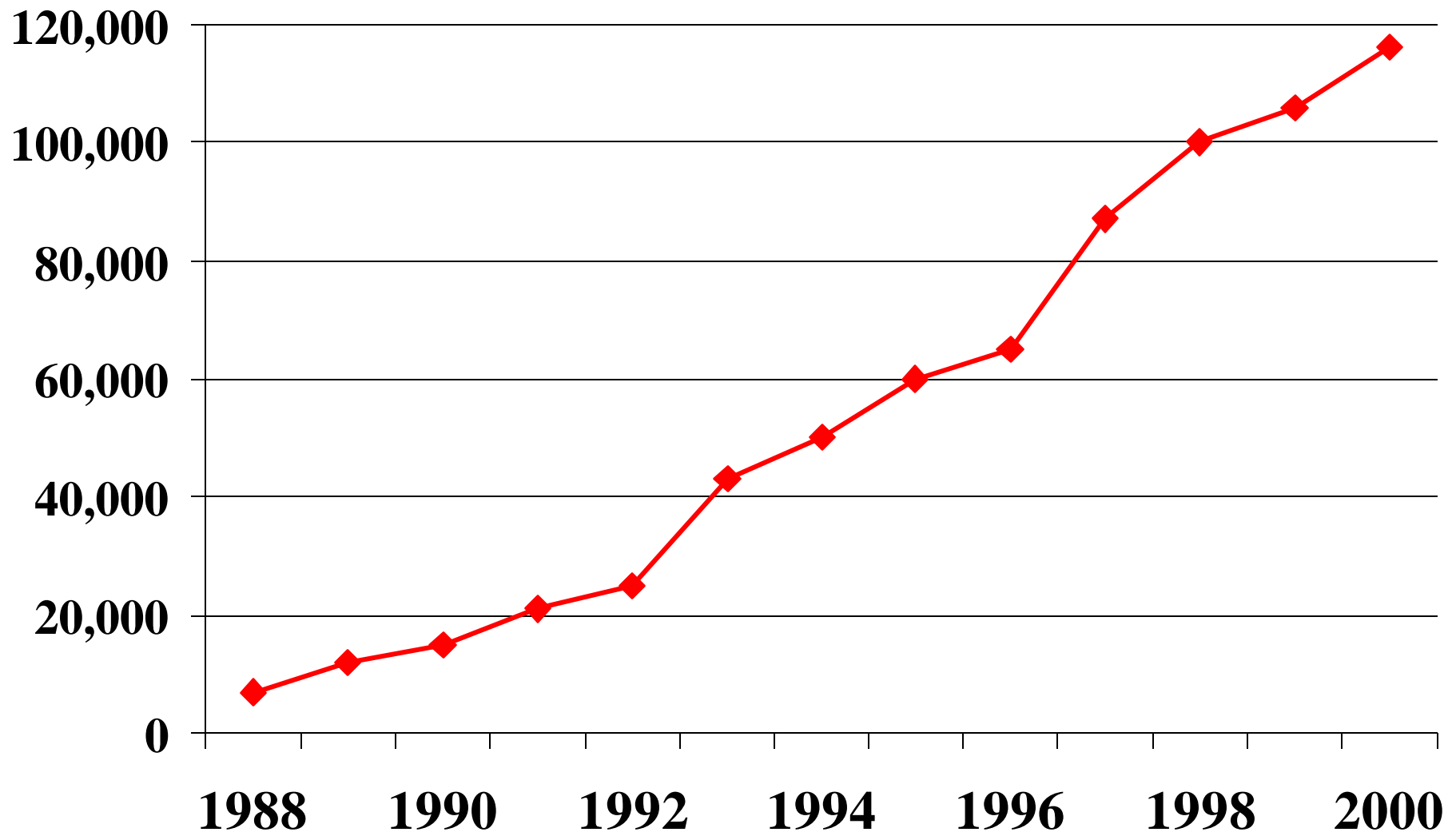
*Wireless Phone Subscribers in the U.S.\**



\*Source: Cellular Telecommunications Industry Association

## and Wireless Emergency Calls...

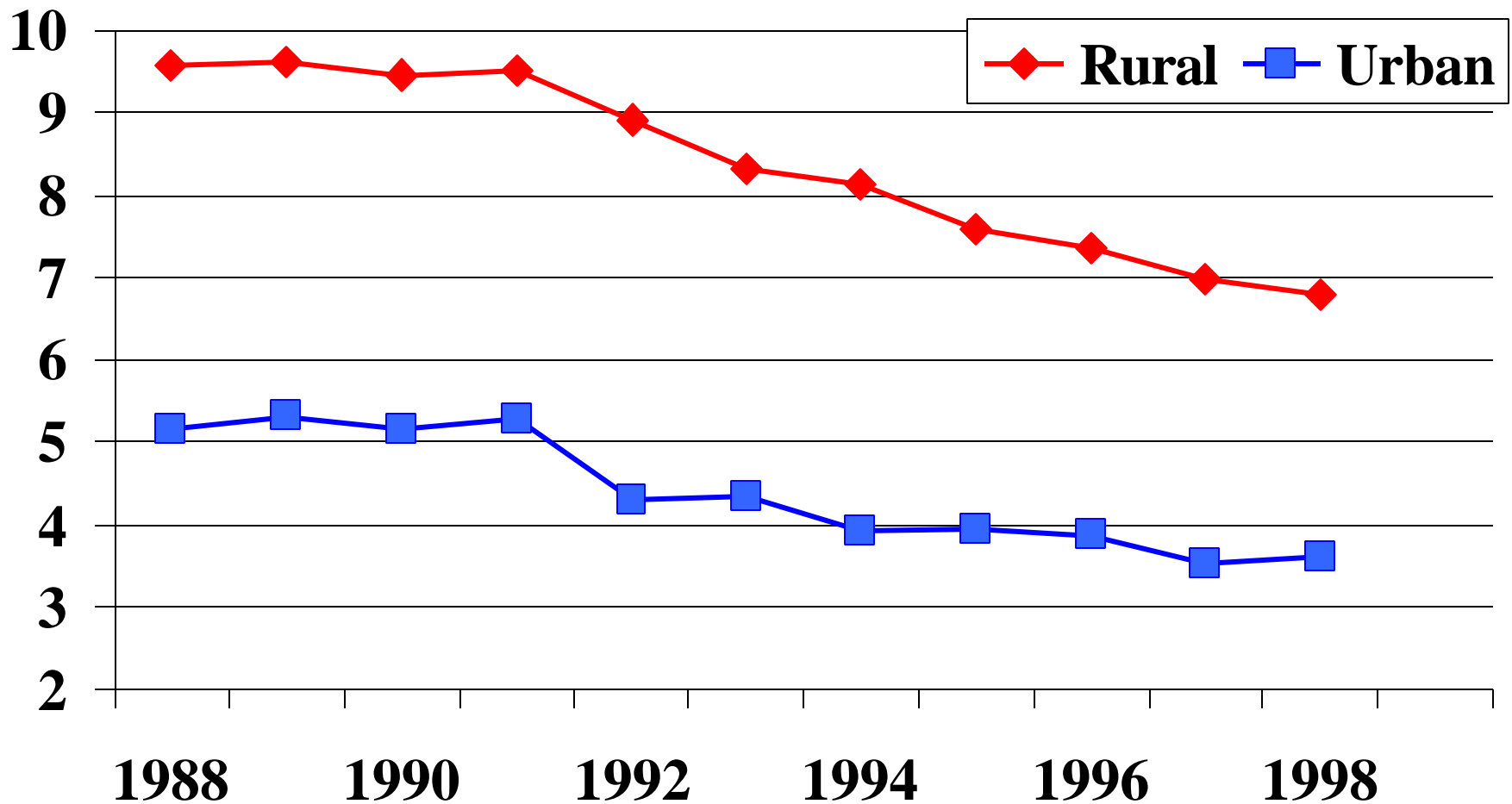
*Estimated Number of Wireless Emergency Calls Per Day in the U.S. \*\**



\*\*Source: Cellular Telecommunications Industry Association

# Tracks the Reduction in EMS Notification Times

*Time of Fatal Crash to EMS Notification, U.S. Averages\*\*\**  
(in minutes)



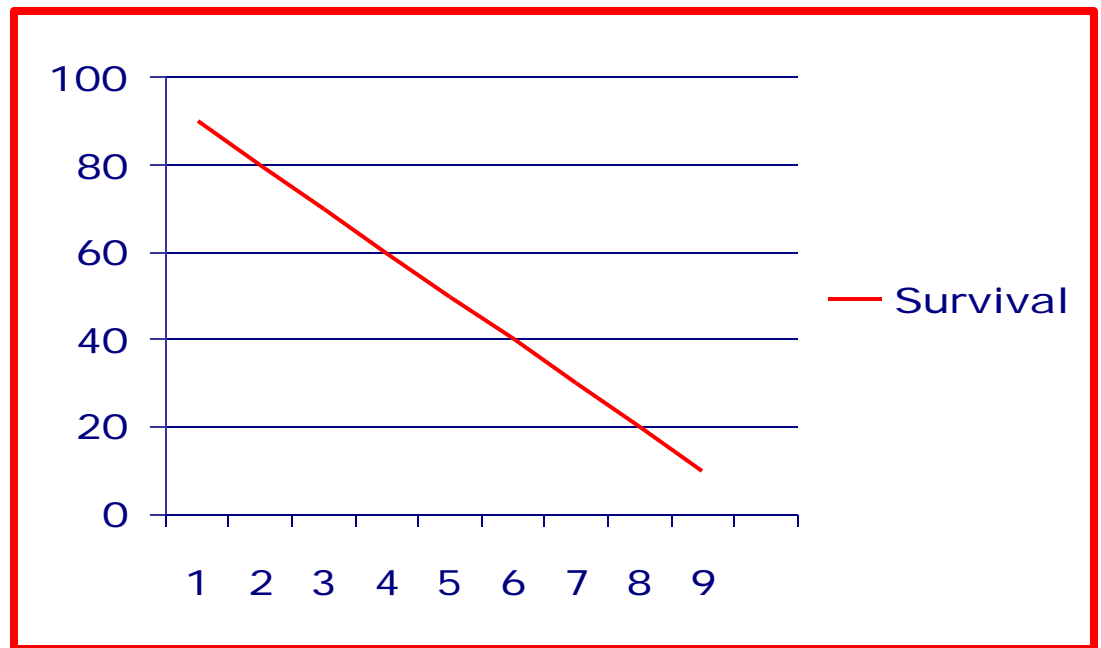
# Wireless and Safety:

## Wireless In-vehicle Communications

- Reporting Aggressive and Drunk Driving
- Reporting Emergencies
- Reporting Highway Conditions and Incidents
- Issue: Taking Advantage of New Technologies Safely

# Every Second Counts for victims of Sudden Cardiac Arrest!

- ♥ Most victims of sudden cardiac arrest are in ventricular fibrillation (VF) when they collapse
- ♥ The ONLY treatment for VF is defibrillation
- ♥ With each minute that passes after cardiac arrest the chance of survival is reduced by 7 - 10 %





# PSAP Screen Today With Wireless Emergency Calls



# The Next Step: Automatic Crash Notification (ACN)

## ACN Data - Predicts Severity of Injury

### Occupant #1

**Post Crash Algorithm: Injury Probability**

File Data Help

**Vehicle / Crash Data**

Clear Data RollOver: No  
Crash Delta V (mph): 16  
Side Damage, Passenger Compartment: Yes  
Rear Damage: No  
Curb Weight (lbs): 4012

**Incident ID:**

**Estimate of Injury Probability**

100%  
50%  
0% 10%

**Occupant Data**

Clear Data Seat Belt Used: Yes  
Age: 68  
Gender: Male  
Entrapment: No  
Complete Ejection: No

Read IVM Data  
Override IVM  
Exit

Actual Injury: Cervical Strain (AIS -1)  
Transported and Released

### Occupant #2

**Post Crash Algorithm: Injury Probability**

File Data Help

**Vehicle / Crash Data**

Clear Data RollOver: No  
Crash Delta V (mph): 16  
Side Damage, Passenger Compartment: Yes  
Rear Damage: No  
Curb Weight (lbs): 4012

**Incident ID:**

**Estimate of Injury Probability**

100%  
50%  
0% 25%

**Occupant Data**

Clear Data Seat Belt Used: No  
Age: 67  
Gender: Female  
Entrapment: No  
Complete Ejection: No

Read IVM Data  
Override IVM  
Exit

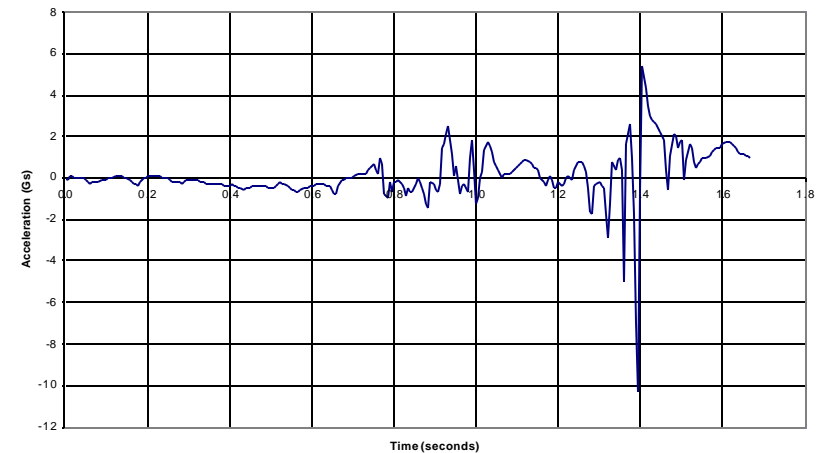
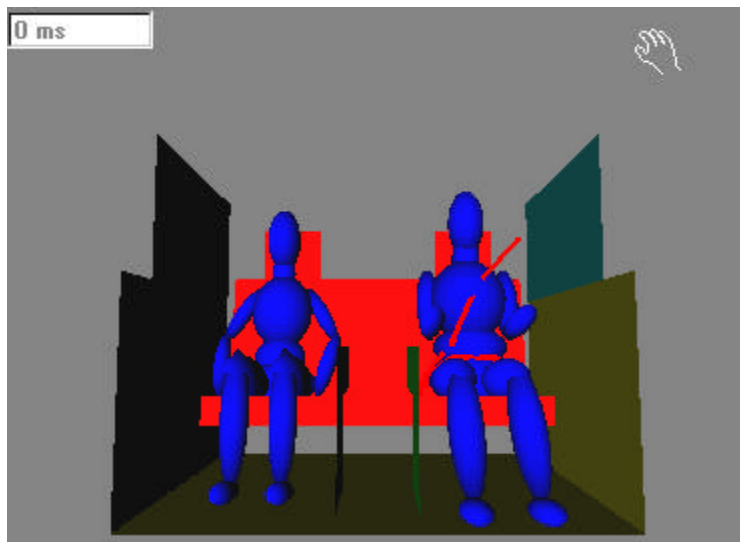
Actual Injury: Non-displaced  
Compression Fracture of the L1  
Vertebral Body (AIS-2) Transported  
and Hospitalized (2 days)

Source: Veridian Engineering

# Modeling of ACN Crash 1/31/99

## Articulated Total Body Code (ATB)

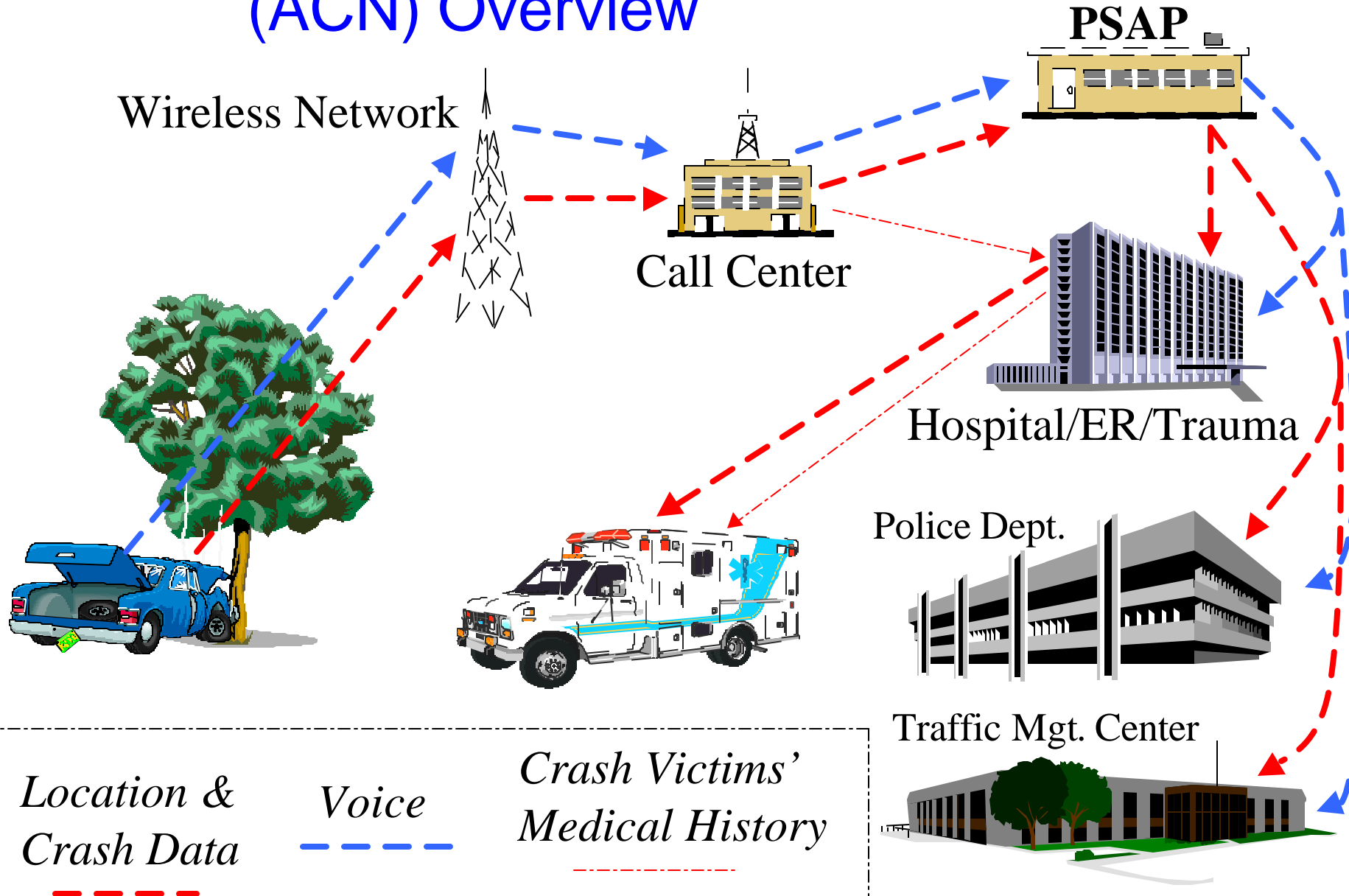
- 3-D Coupled Rigid-Body Dynamics
- Occupant kinematics
- Location and severity of cabin-interior body contacts
- Estimates of accelerations and forces on body regions



## Front Right Passenger- Pelvic Acceleration

Source: Veridian Engineering

# Automated Collision Notification (ACN) Overview



# Today's Technology: Mayday Systems

- Standard Feature In Today's Telematics Services Package (Mercedes TeleAid, GM OnStar, Lincoln Rescu, etc.)
- Immediate Notification Of Crashes Or In-vehicle Emergencies When Airbag Deploys Or Emergency Call Button Is Pressed
- Real-time Information For 9-1-1, Law Enforcement, EMS, And Incident Managers

# Challenge of Telematics Mayday Systems

- Increasingly Important Role Of Third-party Call Centers (OnStar, ATX Technologies) In Provision Of Emergency Services
- Series Of Integration Issues Between Private Call Centers And 5,500 Public Safety Answering Points (PSAP database, standards, protocols, call priority, training, awareness, etc.)
- No Ability To Send Enhanced Vehicle Information Such As Sophisticated Automatic Collision Notification Data (roll-over, delta velocity, medical information, etc.) To 9-1-1, EMS, And Others

## Solution:

# The National Mayday Readiness Initiative

- National Mayday Readiness Initiative (NMRI) Is A Public-Private Process To Work Out Integration Issues Between Private Call Centers, PSAPs, Incident Managers And EMS
- Launched On May 22, 2000 With Representation From Automotive OEMs, Telematics Service Providers, Consumer Organizations, Government, Public Safety, and EMS
- Co-sponsored By ComCARE Alliance And U.S. Department of Transportation; Supported By A Grant From General Motors

# National Mayday Readiness Initiative

- Inclusive Process To:
  - Increase Awareness of Mayday Technologies
  - Reach Non-regulatory Consensus On Key Issues: Technical, Policy and Business
  - Develop Public-Private Partnership Model For Solving Future Policy Issues
- <http://www.NMRI.net>; contact ComCARE to participate



# **The ComCARE Alliance**

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